



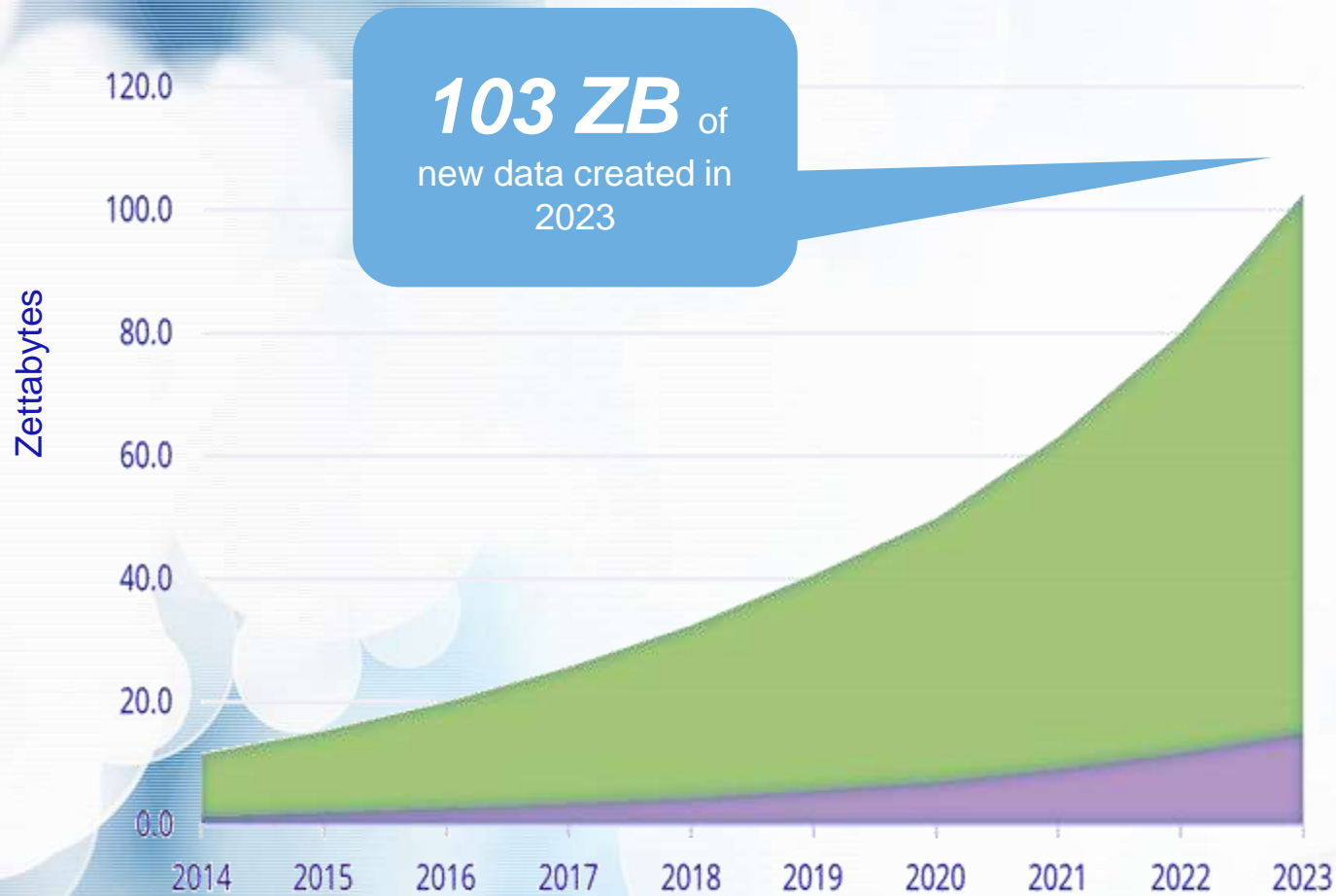
# 數據驅動下的數位轉型新趨勢

## 掌握成功致勝關鍵

Helen Chiang  
General Manager  
IDC Taiwan

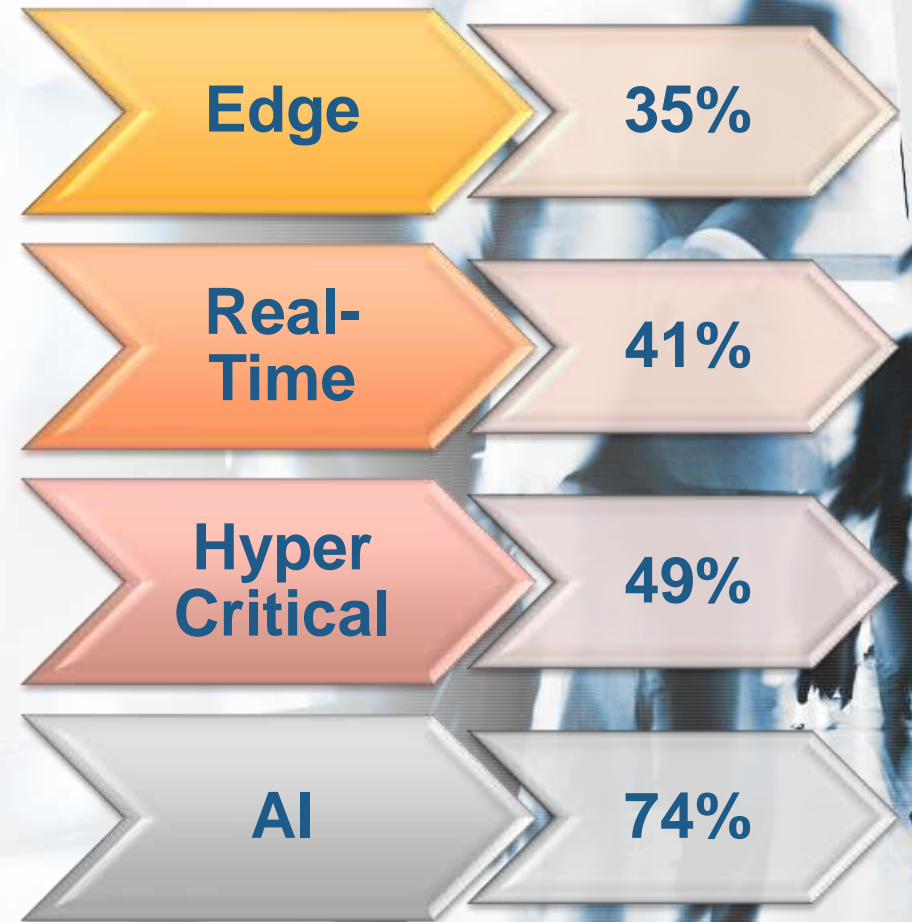
# Digital Transformation (DX) 2.0

## Data-Driven Transformation



Source: IDC Global DataSphere, 2018

### 2013-2023 CAGR



# The Key Elements of Digital Transformation

- Data goes "hyperscale" (100s to 1000s of exabytes)
- AI-based automation ramps
- Edge intelligence multiplies

## Data & Insight

- App explosion
- By 2021, 60% of CIOs will deliver "agile connectivity" via APIs and architectures that interconnect digital solutions from cloud vendors, system developers, startups, and others.
- A radio revolution brings always-on connectivity

## Agile / connect

## Reach & Scale

- Borderless clouds to edge
- Seamless cloud-to-cloud and simple cloud-to-edge experiences
- Consumption model
- Everything as a service accelerates

## Trust/Secure

- Composite workload need secure and reliable interconnection
- Roots of trust; Risk in context
- Persistent authentication and authorization
- Aggressive governance
- Security wakes up to CX

**DX & Innovation**



# Finance Sector Leads the DX



# Lifestyle Banking

Seamless integration with My day-to-day life

## Frictionless Customer Experience

- YouTube, G.A.F.A, WeChat



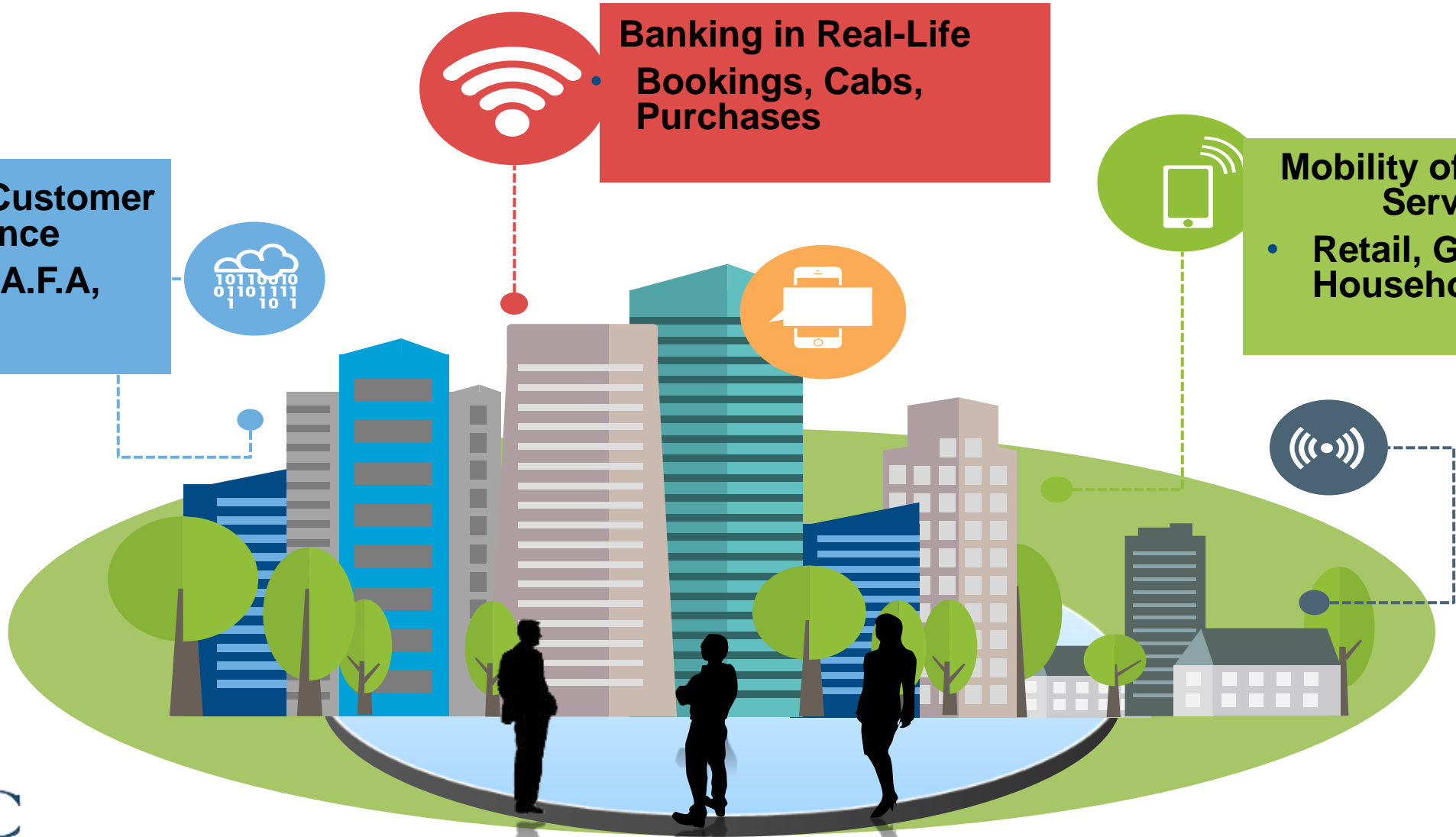
## Banking in Real-Life

- Bookings, Cabs, Purchases



## Mobility of Financial Services

- Retail, Groceries, Household



# Digital Consumer

## Mentorship

Improve my personal and/or professional life

## Continuity

Know my whole relationship with you

## Interactive/Realtime/Efficiency Personalization

Communicate on my terms

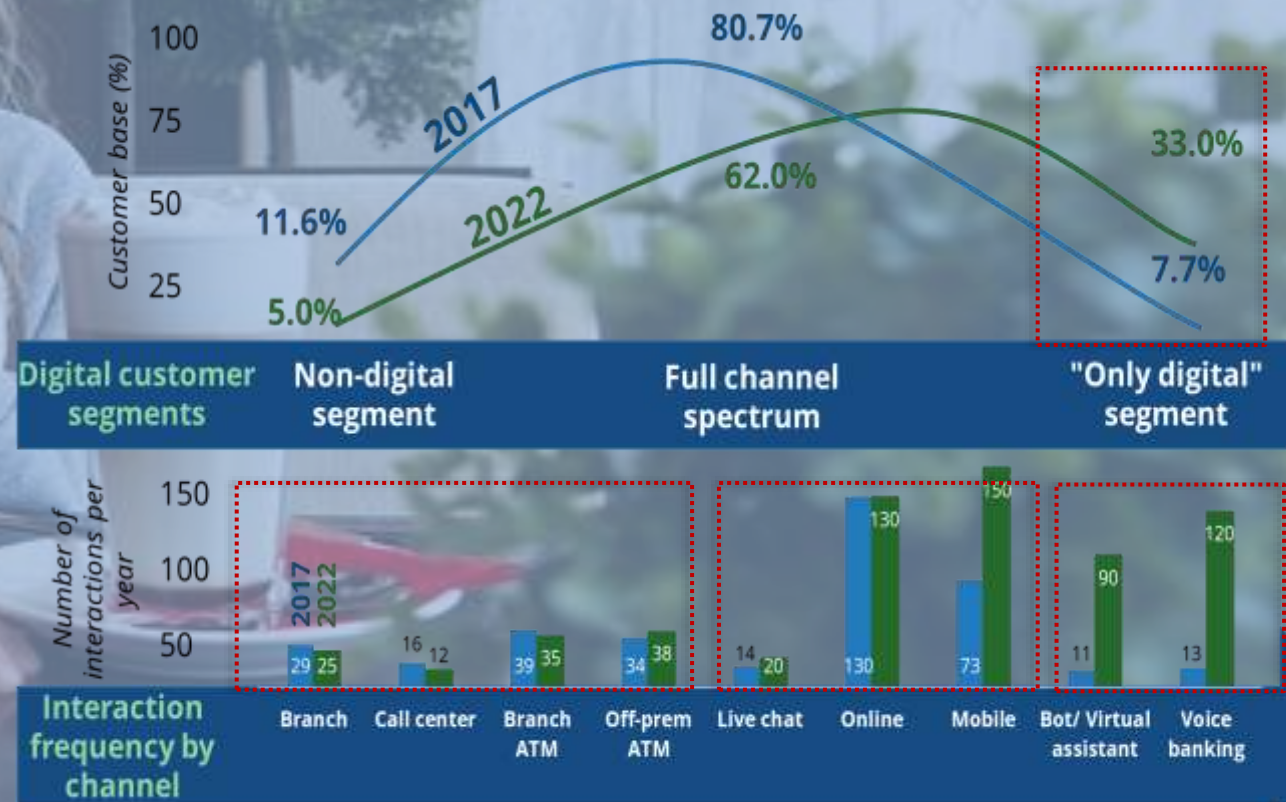
## Always available

Anticipate my needs

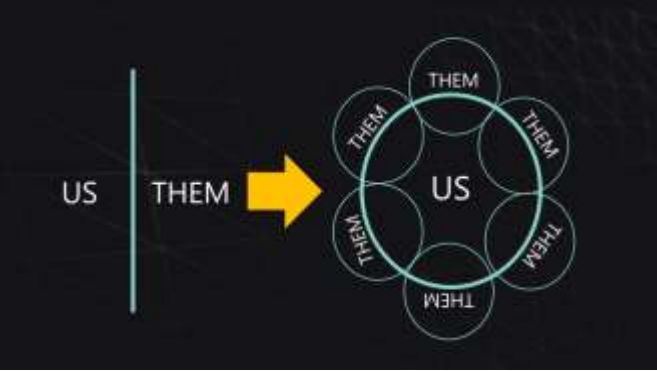
## Consent

Give me a reason to tell you about myself

## The Digital-Only Customer Segment

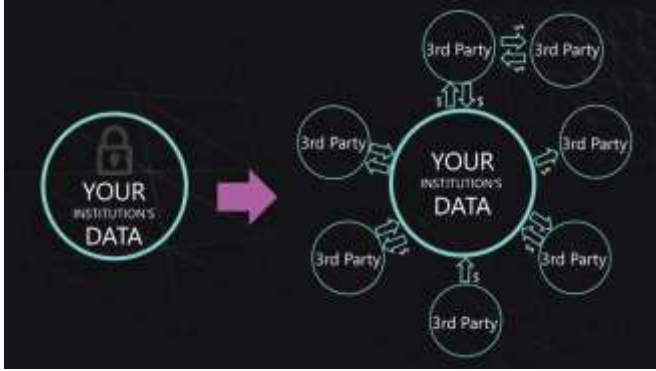


# Open Banking



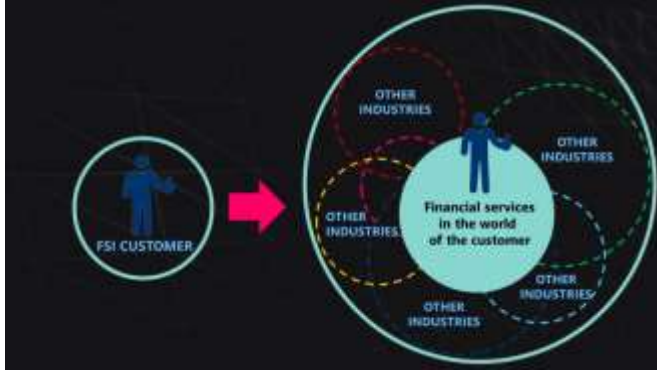
## INNOVATION ACCELERATION

<b>Objectives</b>	<ul style="list-style-type: none"> <li>Speed, agility, flexibility, and innovativeness by leveraging external capabilities and partners</li> </ul>
<b>Business model transformation</b>	<ul style="list-style-type: none"> <li>Co-innovation platforms</li> <li>White-label solutions</li> <li>Application marketplaces</li> <li>IT consumption models                             <ul style="list-style-type: none"> <li>Outcome-oriented (revenue sharing)</li> <li>Risk sharing</li> </ul> </li> </ul>
<b>Requirements</b>	<ul style="list-style-type: none"> <li>Platform to quickly and securely connect to and expand the IT partner ecosystem</li> </ul>



## DATA MONETIZATION

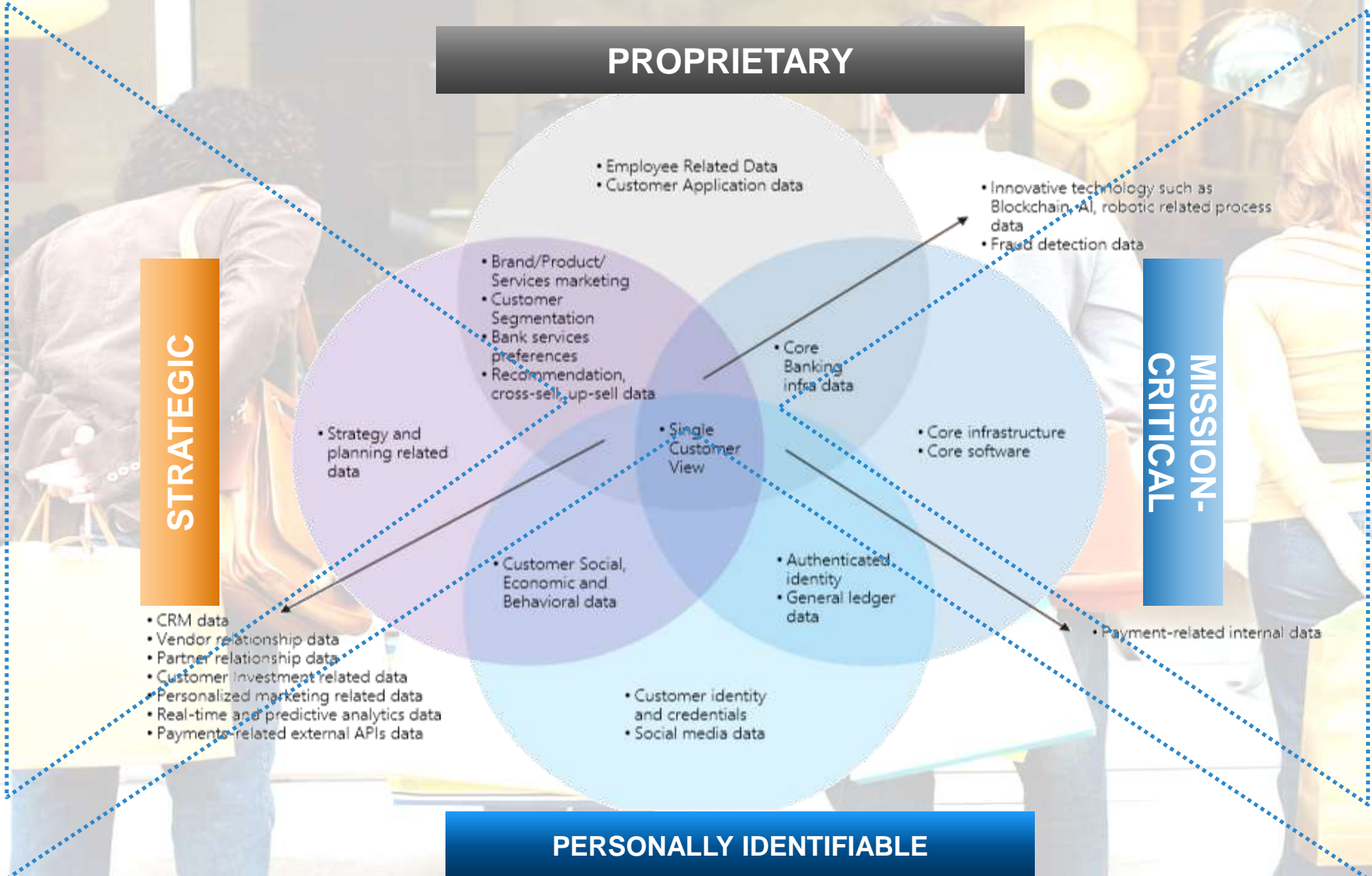
<b>Objectives</b>	<ul style="list-style-type: none"> <li>Make up for lost transactional revenues through information-based products</li> </ul>
<b>Business model transformation</b>	<ul style="list-style-type: none"> <li>Data-driven models                             <ul style="list-style-type: none"> <li>Multibank aggregation and production</li> <li>KYC, security, identity as a service</li> <li>Risk and counterparty scoring</li> <li>Payment statistics</li> <li>Banking as a service</li> </ul> </li> </ul>
<b>Requirements</b>	<ul style="list-style-type: none"> <li>Data management and analytical competencies</li> <li>Automated workflows</li> </ul>



## LIFESTYLE INTEGRATION

<b>Objectives</b>	<ul style="list-style-type: none"> <li>Tighter integration with customer and delivery of personalized services</li> <li>Become a trusted service provider</li> </ul>
<b>Business model transformation</b>	<ul style="list-style-type: none"> <li>Outcome-oriented models                             <ul style="list-style-type: none"> <li>Treasury as a service</li> <li>Analytics as a service</li> <li>Platform (matchmaking, buyer/seller, invoice presentment)</li> </ul> </li> </ul>
<b>Requirements</b>	<ul style="list-style-type: none"> <li>Data management and analytical competencies</li> <li>Partner ecosystem for data sharing and service delivery</li> </ul>

# Data, Data, Data.... the New Ecosystem of Data

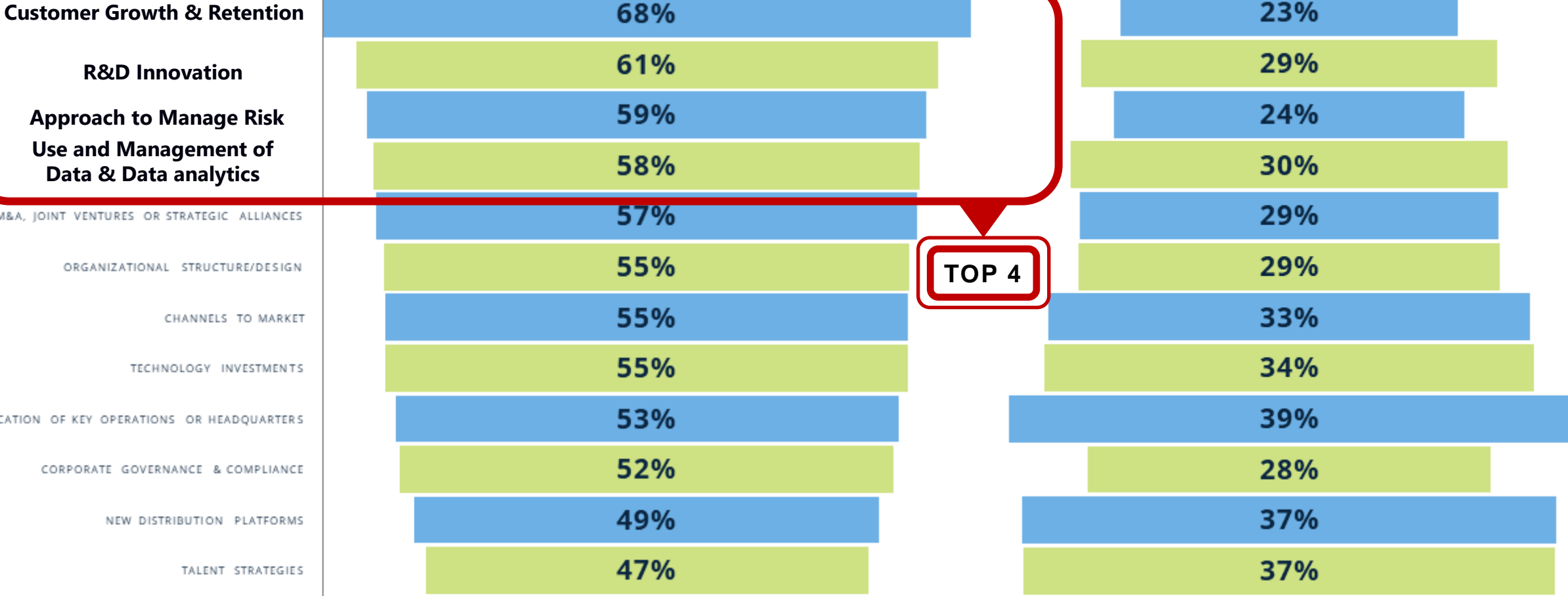




# Banking : The Priority of Digital Transformation

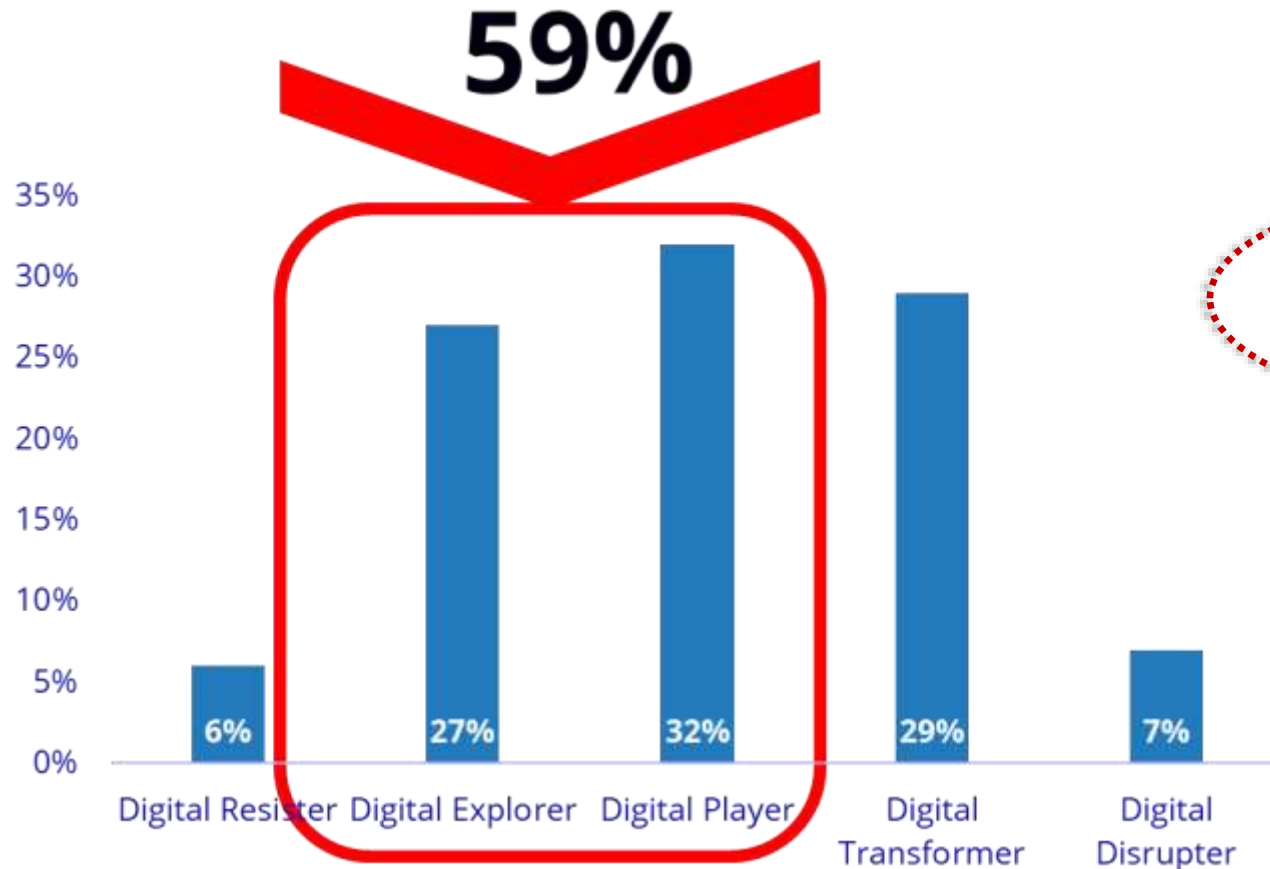
TOTAL CONSUMER/PLANNING CHANGE AND CHANGE IS UNDER WAY - BANKING

NO NEED TO CHANGE - BANKING



TOP 4

# But .....Key Challenges Today



What are the key barriers to DX success?

## Legacy Systems

We have legacy systems to support

## Talent

We do not have enough people with the right skills

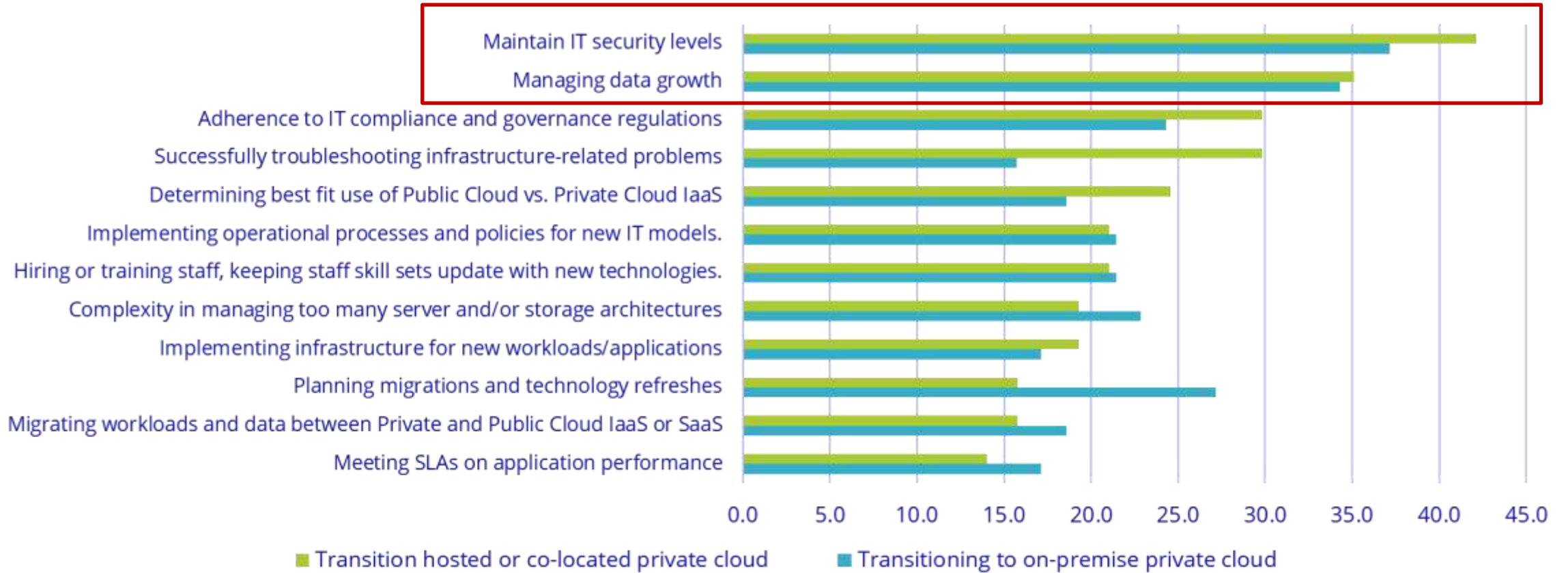
## Culture

We do not have the innovation culture to bring to scale

Transformation approaches, particularly in infrastructure, need to help companies overcome these barriers

# Key Challenges Today

What are your organization's most pressing IT infrastructure challenges or problems today?



# Digital Transformation: Manageable, Simplified, Open and Continuity and Secured

## Architecture Uniformity

Shared production environments

*"Product and software developer leverage on common platforms."*

## Reduced Complexity



Eliminate technology sprawl

*"Turnaround times for failure resolution, updates and software launches are lowered by up to 97%."*

## Open / Innovation



APIs and architectures that interconnect digital solution

## Business Continuity



Regulation & business specificities

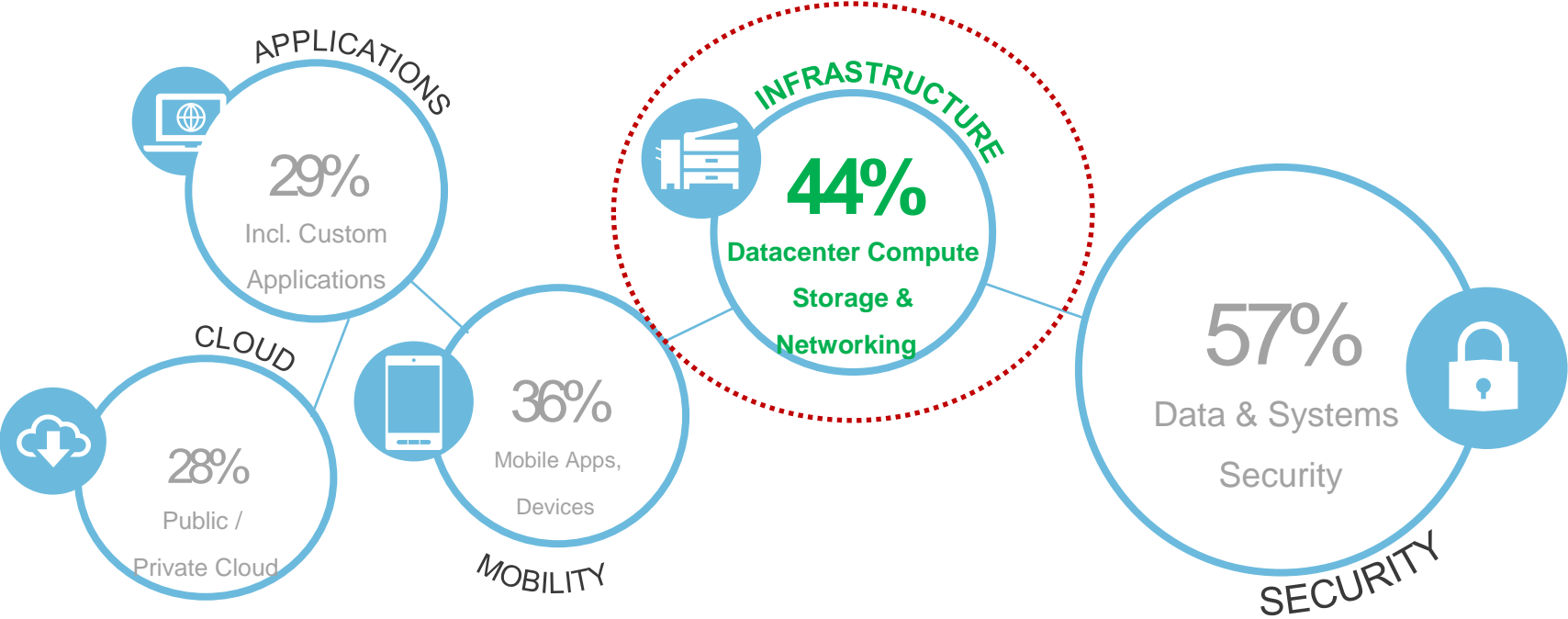
## Security Strengthening



Uncover service threats  
Predict & prevent attracts

# The Focus of IT Infrastructure Investment for DX

Which of the following IT areas were the largest investments and/or changes made in response to the **digital transformation (DX) project**?



The barriers to digital transformation that we have seen mean that significant investment in changing the foundations of the IT infrastructure are needed.

We are starting to move beyond dedicated systems and monolithic applications to the era of DevOps and automation in which new applications and services can be deployed quickly to adaptable infrastructure.

This requires infrastructure designed from the ground up to be an **intelligent core** that is manageable, open, and integrated.

The result is that it can be **reprogrammed as needed** for different workload patterns as business patterns change.

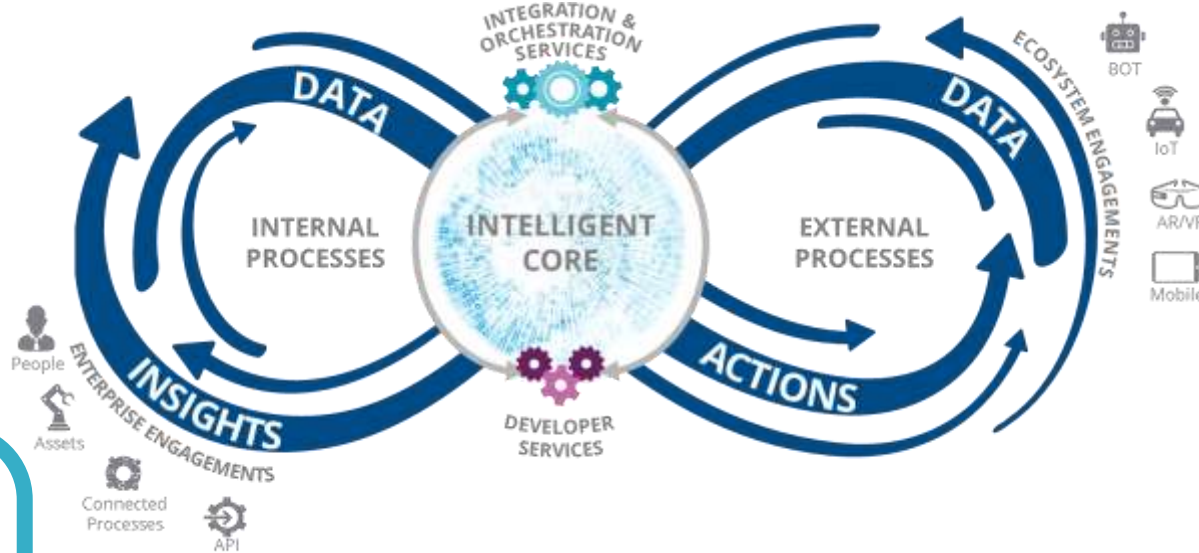
# DX Will Be Built on Infrastructure Innovations

## Flash Storage

Boosting performance, availability, and quality of critical workloads that "can't be in the public cloud"

## NVMe and Storage Class Memory

Supporting rapid decision-making in zero-latency use cases (e.g., fraud analysis, connected cars, smart cities)



## Abstraction

Using cloud system SW and abstraction layers to unify across environments — moving away from siloed management towards automation and orchestration, and exposing standard APIs to apps

## Software-Defined

Providing agility, scale, cost-efficiency, and ease of management for DX — helping make enterprise datacenters be cloud and digital ready

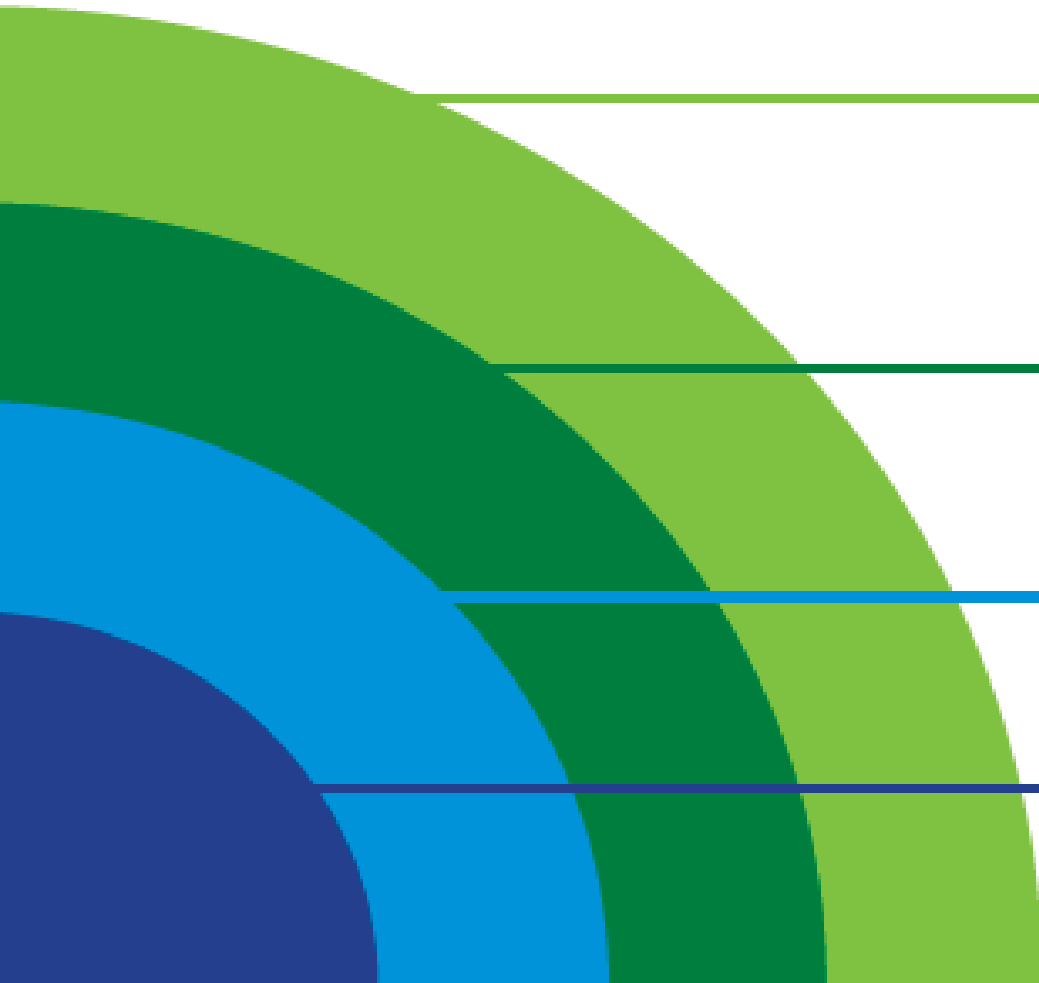
## Converged & Hyperconverged

Removing technical barriers to deployment — making software-defined principles accessible with integrated, pretested code

## Containers & PaaS

Deploying container-ready infrastructure to repackage traditional apps and develop next-gen apps

# The Race For The Great ECO-SYSTEM Banking



## AGGREGATION — LIFESTYLE

- Couponing (loyalty, partners)
- Ticketing (data consolidation)
- Peer reviews (Independent opinion)
- Product comparison (cross-industry)
- Online shopping (platform, payments)

## FACILITATION — SERVICES

- Insurance (brokerage, distribution)
- Education (planning/research)
- Travel services (promotions, support)
- Social platforms (topical communities)

## ADVISORY

- Real estate (investment, selection)
- Financial/retirement planning
- Healthcare (planning, financing, support)

## TRADITIONAL BANKING

- Lending and deposits
- Card and payments
- Bancassurance (basic products)
- Basic investment products



# Contact Information



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# IDCxIBM 數位轉型2.0 企業決勝點：資料儲存策略

## 台灣金融案例分享

王若馨 Trini Wang  
台灣IBM 硬體系統部 資深業務經理

# 數據驅動下的數位轉型新趨勢 – 儲存資源管理挑戰

## 7x24 不中斷

### 快速服務

- 支持業務連續性的架構，因應金管會要求服務中斷需2小時內恢復
- 高存取低延遲的儲存設備

## 儲存資源整合和

### 最佳化利用

- 新舊、不同來源之儲存資源整合
- 資料分級分層
- 管理可視性

## 資料安全和保護

- 資料加密
- 資料備援/備份

## 多元的前端服務平台 和雲化支持

- 跨服務平台支援
- 開源服務支持
- 彈性擴展

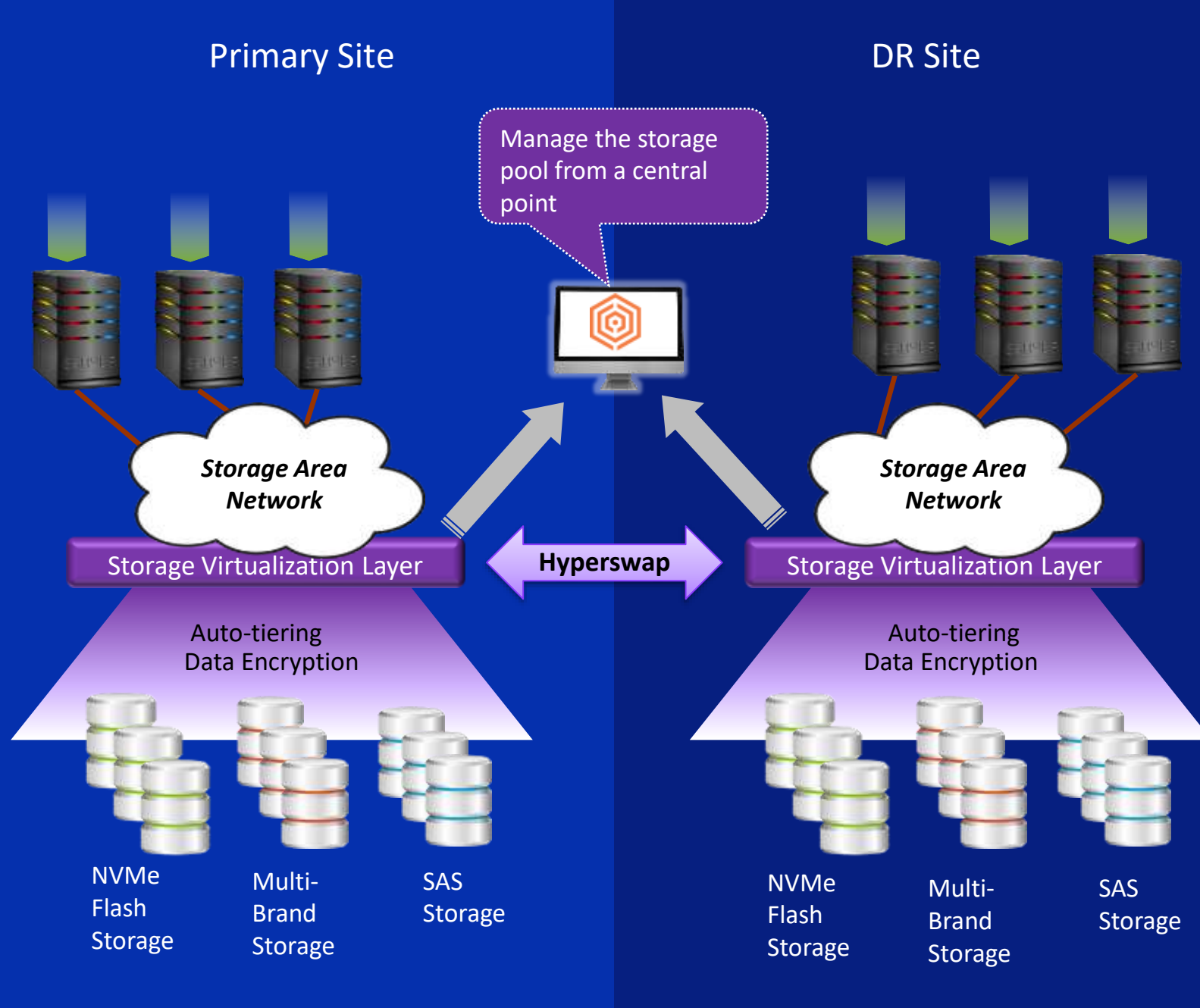
# 金融客戶實際案例 架構分享

採用 IBM 軟體定義解決方案  
Spectrum Storage 打造高可用、高  
彈性、安全、高效能之儲存資源池

透過 IBM Spectrum Virtualization 整  
合新舊、不同廠牌之儲存設備，提  
供彈性擴展的資源池，並建構主備  
中心之間自動切換的高可用機制

搭配 IBM Spectrum Control 提供統一  
管理監控的平台，提高管理可視性，  
提升問題查找效率

具備支援開源應用和  
雲端服務能力





**Thank you**



# IDCxIBM 數位轉型2.0 企業決勝點：資料儲存策略

## IBM 儲存解決方案



戴忠義 (Dennis Dai)

台灣IBM硬體系統部 資深技術顧問

# 金融客戶 顯性需求

空間及效能需求

IBM 全閃存

高可用性需求

虛擬層解決方案

建立標準化平台

軟體定義儲存

# IBM FlashSystem – 以資料驅動面向，研發多雲企業的核心



## 靈活、現代、敏捷且端到端 NVMe 最佳化的儲存系統

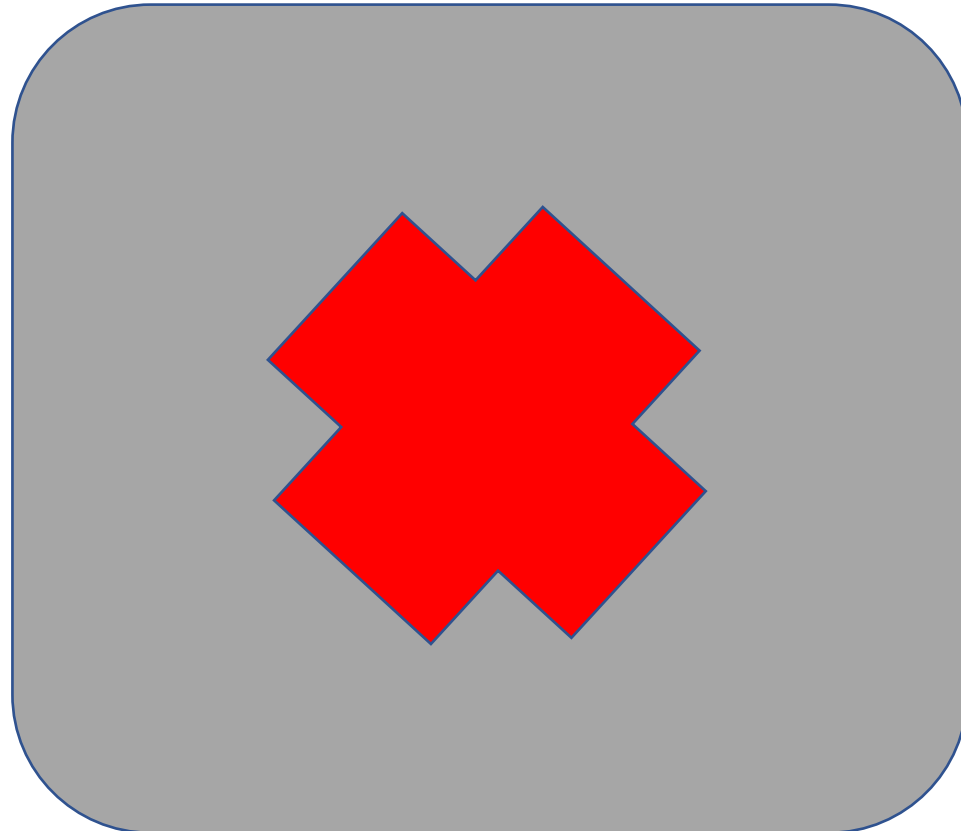
1. NVMe 硬碟 及 NVMe-oF 通訊協定支援
2. SCM、NVMe 及 NVMe-oF 端到端整合技術以構建新一代全閃存系統
3. 業界最低延遲性及最高效能的儲存設備
  - A. 1800萬 IOPS 極致效能
  - B. 小於 70 micro-second latency
  - C. 業界最好 性能密度比

儲存級記憶體 (Storage Class Memory, **SCM**)

# 本地高可用 及 異地備援 解決方案

## 可整合全閃存設備, 效能影響最小的儲存虛擬化方案

1. 17年不斷演進邁向 第十代 SVC 儲存化虛擬解決方案; 儲存資源異動時, 前端伺服器無感且可繼續運作
2. 可納管市場上主流500多種 IBM 或 非 IBM 儲存設備, 以建立統一管理平台, 不需要在去管理底層各家設備
3. 相同設備可以隨時根據需求改變備援架構(同步轉非同步或非同步轉同步), 本地高可用、異地備援 或 雙活架構



Metro Mirror (Sync)  
Global Mirror (Async)

HyperSwap A/A  
Stretch Cluster  
A/A+GM



IBM SVC



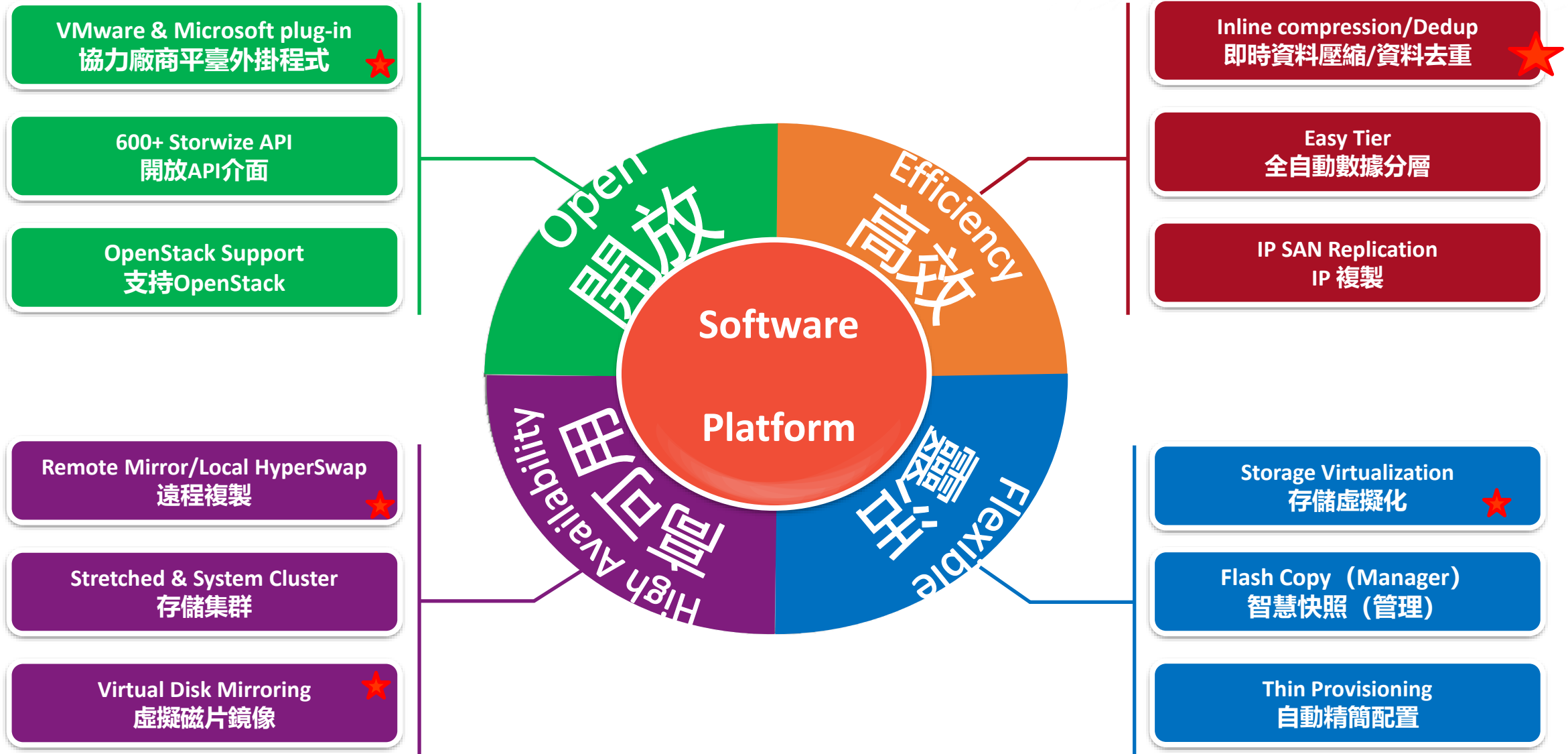
FlashSystem



FlashSystem



# IBM 平臺存儲價值 – 加值本來儲存設備沒有的功能



# 2020+

## 數位轉型第二篇章

上雲之旅



建構更智慧化的企業



網路安全與彈性



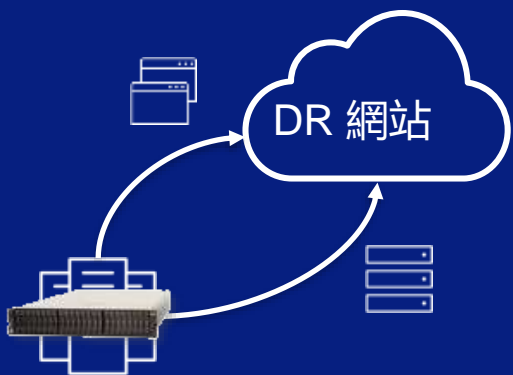
# 企業已經開始進行簡單遷移與創新



# 這些系統很容易... 連接到雲端

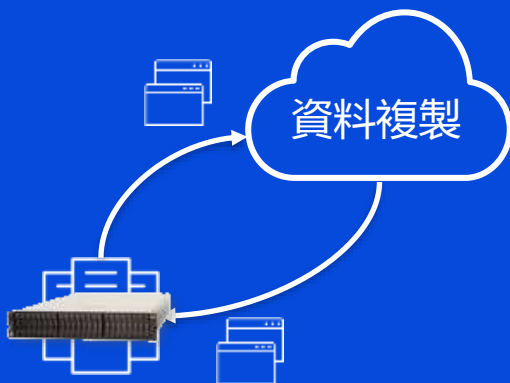
## 業務連續性

利用租賃的公有雲資源



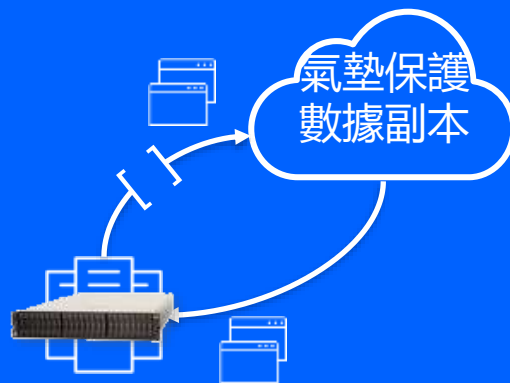
## DevOps 分析

將暫存資料從企業內部複製到雲端



## 網路彈性

即使發生網路事故，依然能持續交付成果



## 工作負載遷移

將永久資料移轉到雲端



# 這些系統很容易...

## 整合

當儲存由 VMware 或  
Kubernetes 管理員驅動時

vmware®

VASA

vVol

SRM



kubernetes



OPENSIFT  
Container Platform



# 這些系統很容易... 編排

## 降低風險

每個人按其自己的方式  
做事

## 實現任務自動化

開發人員無需基礎架構  
專業知識，也能完成開  
發目標

## Ansible 運行手冊集成



ANSIBLE



**RED HAT®**  
**ANSIBLE®**  
Automation

# 這些系統... 極具網路彈性

## 加密

採用 FlashCore 模組，不會對性能造成影響

通過軟體實現跨 IBM 與非 IBM 儲存的一致方法

在將資料移轉到雲端或從雲端移出數據時



## 雲氣墊

快照遠端存放在 AWS 中



## 監控

惡意軟體/勒索軟體檢測

基於 AI 的異常檢測



## 快照

應用感知

環境集成



# IBM 屢獲殊榮的儲存產品 企業數位再造的平台

## Storage for Hybrid Multicloud (混合多雲)

IBM Storage Insights

IBM Spectrum Virtualize

**New** All-Flash and Hybrid Systems

FlashSystem 5000

FlashSystem 7200

FlashSystem 9200

FlashSystem 9200R

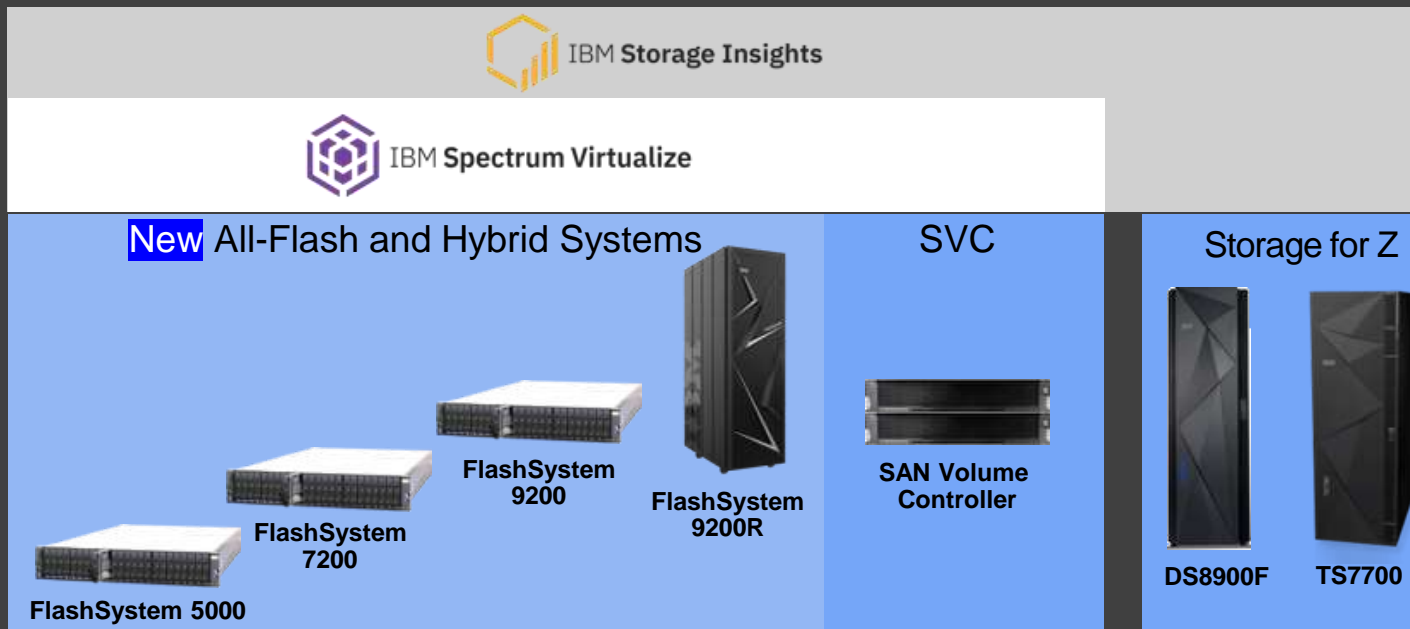
SVC

SAN Volume Controller

Storage for Z

DS8900F

TS7700



## Storage for AI & Big Data (AI與大數據)

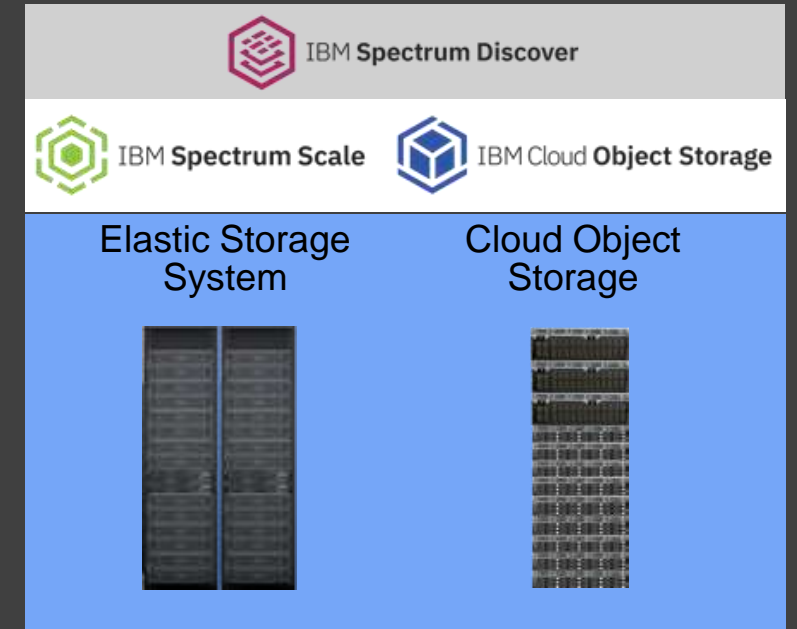
IBM Spectrum Discover

IBM Spectrum Scale

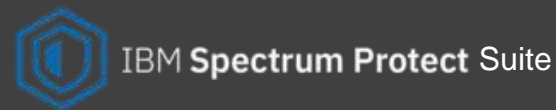
IBM Cloud Object Storage

Elastic Storage System

Cloud Object Storage

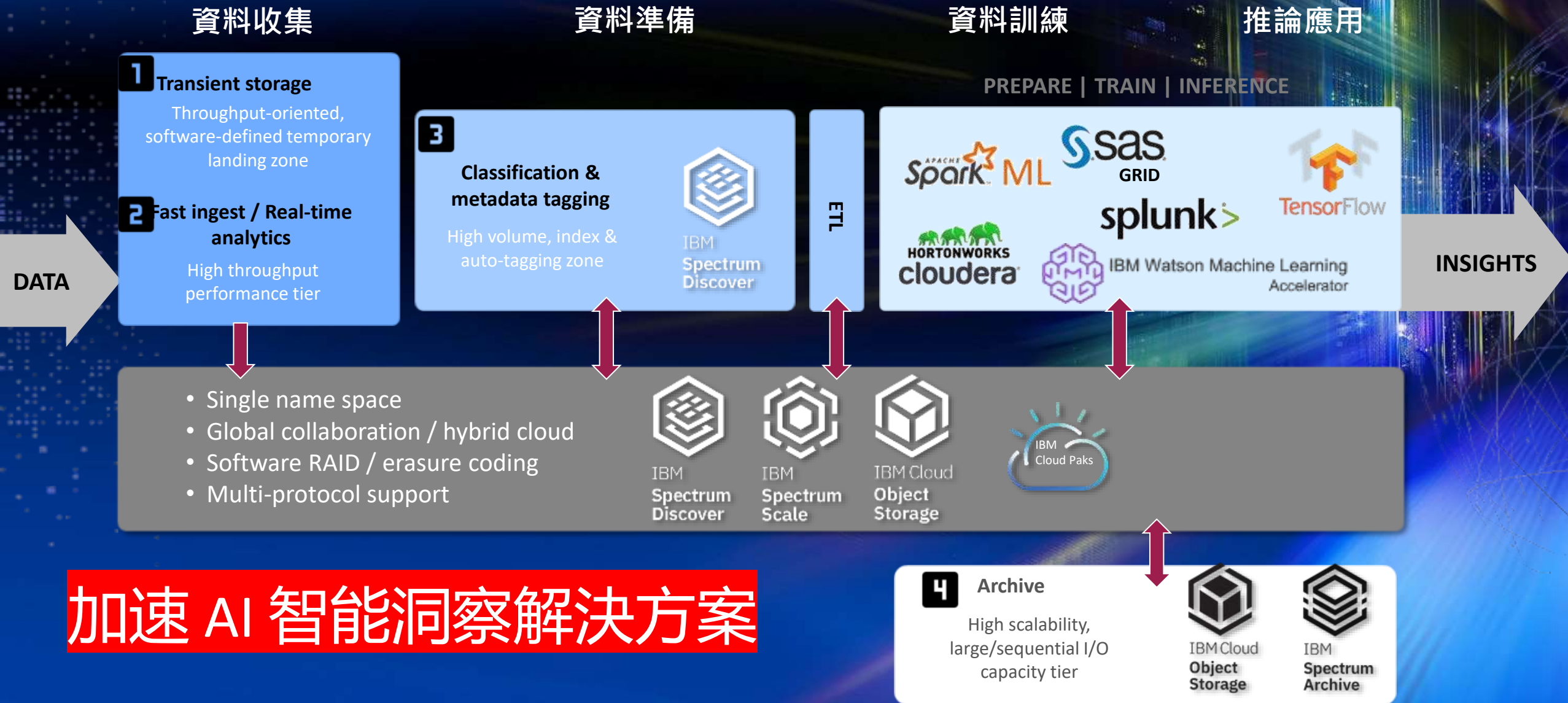


## Cyber Resiliency & Modern Data Protection





# IBM Spectrum Storage 軟體定義儲存解決方案整合 AI 數據 workflow



加速 AI 智能洞察解決方案

# SUMMARY



- NVMe/NVMe-oF/SCM 代表是新產品及新技術
- IBM 儲存虛擬層解決方案的價值
  - 業界最快的虛擬層儲存方案
  - 符合 99.9999 的高可用架構，具備同地高可用/異地備援以及遠距雙活模式
  - 簡易管理的標準化平台
- 數位轉型第二篇章的三大重點
  - 混合多雲的整合
  - 端到端 AI/Big Data 解決方案
  - 網路安全及彈性